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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,454	01/02/2001	Stefan Dyckerhoff	0023-0014	7151
44987	7590	05/31/2005	EXAMINER	
HARRITY & SNYDER, LLP 11240 WAPLES MILL ROAD SUITE 300 FAIRFAX, VA 22030			PEZZLO, JOHN	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,454

Applicant(s)

DYCKERHOFF ET AL.

Examiner

John Pezzlo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-72 is/are allowed.
- 6) ☒ Claim(s) 1,2,9,22-24 and 26-29 is/are rejected.
- 7) ☐ Claim(s) 3-8,10-21,25 and 30-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 23 August 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

I. Claims 1, 2, 22, 23, and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Sindhu et al. (US 5,905,725) hereinafter Sindhu.

1. Regarding claims 1 and 26 – Sindhu discloses at least one sprayer configured to receive packets on at least one incoming packet stream and distribute the packets according to a load balancing scheme (round robin procedure), refer to Figures 2B (callouts 107 and 100) and 5B and column 2 lines 14 to 67 and column 4 lines 21 to 51.

Sindhu discloses a plurality of packet processors configured to receive the packets from the at least one sprayer and process the packets to determine routing information for the packets, refer to Figure 5A (callouts 514, 515, 510, and 505) and column 2 lines 14 to 67 and column 5 lines 26 to 53.

Sindhu discloses at least one desprayer configured to receive the processed packets from the packet processors and transmit the packets on at least one outgoing packet stream, refer to Figure 2B (callouts 102 and 108) and column 2 lines 14 to 67 and column 4 lines 21 to 51.

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2. Regarding claim 2 – Sindhu discloses wherein the at least one sprayer includes a plurality of sprayers, each of the sprayers being connected to distribute packets to each of the packet processors according to the load balancing scheme (round robin procedure), refer to Figures 2B (callouts 107 and 100) and 5B and column 4 lines 21 to 51 and column 2 lines 14 to 67 and column 5 lines 26 to 53.
3. Regarding claim 22 – Sindhu discloses wherein the at least one sprayer, the packet processors, and the at least one desprayer are integrated on a single chip, refer to Figures 19-21 and column 12 lines 49 to 67 and column 13 lines 1 to 10.
4. Regarding claim 23 – Sindhu discloses wherein the at least one sprayer, the packet processors, and the at least one desprayer are provided on separate boards connected via a midplane, refer to Figures 2B and 11 and column 9 lines 18 to 61.
5. Regarding claim 27 – Sindhu discloses a receive controller configured to divide the packets received by the at least one receive interface into a plurality of cells of a predetermined size and store the cells in the shared memory, refer to Figures 2B (callouts 107 and 100) and 5B and column 2 lines 14 to 67 and column 4 lines 21 to 51.
6. Regarding claim 28 – Sindhu discloses wherein the receive controller is further configured to link the cells of a packet together within the shared memory, refer to Figures 6 and 9 and column 6 lines 24 to 67 and column 8 lines 33 to 65.

Sindhu discloses wherein the cell memories are linked together to form logical queues in the shared memory, the logical queues corresponding to at least an input queue and an output queue of variable size, refer to Figure 7 and column 7 lines 5 to 67.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

II. Claim 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhu (same as above).

1. Regarding claim 24 – Sindhu discloses a router, which includes input ports and multiplexers (sprayers) and output ports and demultiplexers (desprayers) and a controller and a shared memory, which comprises dividing packets into cells and storing the cells in the shared memory using a load balancing scheme, round robin procedure.

Sindhu does not expressly disclose wherein the at least one sprayer includes a plurality of sprayers and the at least one desprayer includes a plurality of desprayers, the sprayers and the desprayers being provided together on a plurality of sprayer/desprayer boards, and each of the packet processors being provided on a separate packet processor board.

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At the time of the invention, it would have been obvious to a person of ordinary skill in the art to architect the router using common boards based on like functions such as input boards, output boards, and processor boards in order to reduce cost and stock standard items.

III. Claims 9 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhu (same as above) in view of Sandquist (US 5,506,841).

1. Regarding claims 9 and 29 - Sindhu discloses a router, which includes input ports and multiplexers (sprayers) and output ports and demultiplexers (desprayers) and a controller and a shared memory, which comprises dividing packets into cells and storing the cells in the shared memory using a load balancing scheme, round robin procedure.

Sindhu does not expressly disclose a scheduler configured to preserve an order of the packets through the network device by determining a dispatch time for each of the packets received by the at least one sprayer and scheduling the packets for transmission from the at least one sprayer at the corresponding dispatch times.

Sandquist teaches receiving packets made up of ATM cells and tagging the packets for a dispatch time for transmitting the packets in order to preserve the order of the ATM cells for the packets, refer to Figure 5 and column 2 lines 25 to 67 and column 3 lines 1 to 37 and column 5 lines 19 to 45.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize the scheduling features of Sandquist with the router of Sindhu. The suggestion/motivation for doing so would have been that Sindhu discloses a key for storing the

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packet and the key could also include the tag of Sandquist for scheduling the dispatch times. The benefit being the cell (packet) ordering would be preserved.

Allowable Subject Matter

Claims 42-72 are allowable over the prior art of record.

Claims 3-8, 10-21, 25, and 30-72 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 4 October 2004 have been fully considered but they are not persuasive.

1. Applicants argue on pages 24 and 25 of the response that the restriction was improper. The examiner respectfully disagrees. The search of the independent claims 1, 26, 42, 61, and 67 (Group I) is different from the search required for independent claims 73 and 79 (Group II). The art of searching requires a thorough knowledge of the application and the invention (in this case two inventions) prior to determining the search strategy and the search terms and the field of search and classes and subclasses to be searched, to find all the prior art, required for the examiner to perform the required tasks. As stated in the restriction since these two groups are

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distinct a separate search is required for the independent claims of each invention. Since the two inventions are classified in two separate classes, separate knowledge is required for each area and time is needed prior to the search to determine the relevant terms and areas for the search in order to develop a search strategy. This means that two detailed searches are required. The two searches would be a serious burden for the examiner based on the two inventions and the number of elements embodied in the independent and dependent claims, just because 3 dependent claims (out of 82 claims) have some common elements does not justify the line of reasoning that the search is not a serious burden to the examiner. The serious burden is based on two distinct inventions classified in different areas and a large number of claims with multiple claim elements per claim. After reviewing the arguments and MPEP the restriction is made final.

2. Applicants argue on page 26 of the response that the reference, Sindhu, does not disclose or suggest a plurality of packet processors connected to the at least one sprayer and configured to receive the packets from the at least one sprayer and process the packets to determine routing information for the packets. The examiner respectfully disagrees. As shown in Figure 5A, callouts 514, 515, 510, and 505, the examiner interprets the key reading engine (514), the linking engine (515), the indirect cell processor (510), and the output processor (505) as the plurality of packet processors which receive the packets (cells) from the at least one sprayer (input ports, 107) and collectively process the packets (cells) to determine routing information for the packets (cells). The examiner has mapped the plurality of input ports as the at least one sprayer, wherein each input port provides a packet to the packet processors in a round robin scheme which is a load balancing scheme, refer to Figure 5A callout 500.

3. Applicants argue on page 29 of the response that the reference, Sindu, does not disclose the at least one sprayer is connected to distribute packets to each of the packet processors according to a load balancing scheme. The examiner respectfully disagrees. The examiner has mapped the plurality of input ports as the at least one sprayer, wherein each input port provides a packet to the packet processors in a round robin scheme which is a load balancing scheme, refer to Figure 5A callout 500.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Ramaswamy et al. (US 6,424,621 b1) discloses software interface between switching module and operating system of a data packet switching and load balancing system.
2. Lin et al. (US 6,272,522 B1) discloses a computer data packet switching and load balancing system using a general-purpose multiprocessor architecture.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (571) 272-3090. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

(703) 872-9306

For informal or draft communications, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

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Jefferson Building

500 Dulany Street

Alexandria, VA.

John Pezzlo

26 May 2005

A handwritten signature in black ink, appearing to read 'J. Pezzlo', with a stylized flourish at the end.

JOHN PEZZLO
PRIMARY EXAMINER